00000948

CORRES. CONTROL
OUTGOING LTR. NO.

88-RF-2896

DIST.	LTR	ENCL
SANCHINI, D. J.		
BADER, C. P.		
CAMPBELL, G.W.		
HOOD, R. C.		
KINZER, J. E.		
KIRBY, W. A.		
McNETT, J.F.		
MEYERS, G.W.		
ROECKER, J.H.		
SHANNON, W.M.		
SMITH, R.E.		
WEIDNER, C.W.		
WESTON, W.F.	X	X
WOZNIAK, B.D.		
YOUNG, E.R.		
BETCHER, D.H.		
CARNIVAL, G.J.		
HARMAN, L.K.		
HEBERT, J.L.		
HOEY, J.B.		
HOFFMAN, R.B.		
KLAMANN, R.L.		
KRIEG, D.M.		
LIM, B.W.		
LOUDENBURG, G.E.		
NAIMON, E.R.	X	X
NEWBY, R.L.		
TURNER, H.L.		
VELASQUEZ, R.N.		
BLAHA, F.J.	X	X
ARNOLD, P.	X	X
HOBBS, F.	X	X
LAWTON, F.P.	X	X
CORRES. CONTROL	X	X
MCKINLEY, K.	X	X
SCHUBERT, A.	X	X
BRILL, G.	X	X
TRUJILLO, T.	X	X
SETLOCK, G.	X	X
CLASSIFICATION		
UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTH. CLASSIFIER SIG.
RB Hoffman
9-15-88
DATE
IN REPLY TO LTR. NO.

DEC #
LTR. APPROVALS

ORIG. & TYPIST INITIALS
KBM/dal

Rocky Flats Plant
Aerospace Operations
Rockwell International Corporation
P.O. Box 464
Golden, Colorado 80402-0464
(303) 966-7000
Contractor to U.S. Department of Energy

Rockwell International

ADMIN RECORD

September 15, 1988

88-RF-2896

Albert E. Whiteman
Area Manager
DOE, RFAO

RUNOFF WATER AND SPILL DATA FOR 750 AND 904 PADS

Attn: C. C. Jierree, R. J. Schassburger, and K. Schneider

Attached are two enclosures regarding runoff water data and spill data at the 750 and 904 Pads provided by HS&E. One attachment is an analysis of data, the other attachment are graphs of the data. Spills have only occurred to date at the 904 Pad.

Little interpretation of the data has been included. Overall, great variability is seen in all values. After an initial period on the 750 storage pad where levels of gross alpha, gross beta, and nitrate were elevated, the levels of contaminates have decreased. This may have been due to "dirty" pallets, boxes, and vehicles, with normal precipitation washing the contaminants off. The graphs of the gross alpha and gross beta values at the 750 Pad may be indicating a slight upward trend in values during recent sampling events.

The limited 904 Pad data indicates that levels of gross alpha, gross beta and nitrates have all exhibited elevated levels due to the spill incidents. Samples will continue to be collected and analyzed after each rainfall. The unit-specific procedures are being updated to specify this requirement.

If you have any questions, please contact Allen Schubert of my staff on extension 5251.

Kirk McKinley

K. B. McKinley
RCRA/CERCLA Program

Orig. and 1 cc - A. E. Whiteman
Enc.

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

BY 8U
DATE 8-25-93

A-OU10-000278

750 STORAGE AREA

WATER

A program to sample water was initiated for the 750 area by Environmental Management in 1986 before the first pondcrete was stored at the site. Sampling began in October of 1986 and the first pondcrete was placed on the asphalt in November of 1986. Table 1 summarizes the data for the area before pondcrete was stored.

TABLE 1
Water Quality In 750 Area Prior To Pondcrete Storage

	Gross Alpha	Gross Beta	Nitrate
Mean	12.2 pCi/l	12.8 pCi/l	1.57 mg/l
Std. Dev.	7.79 pCi/l	12.5 pCi/l	.29 mg/l
Max.	19 pCi/l	25 pCi/l	2.0 mg/l
Min.	0 pCi/l	-8 pCi/l	1.2 mg/l
n=	5	5	6

In September of 1987, water quality data for the 750 pondcrete storage area was summarized for the period beginning in November of 1986 with the first storage of pondcrete and extending through September of 1987. Table 2 summarizes this data.

TABLE 2
Water Quality for Period 11/86 to 9/87

	Gross Alpha	Gross Beta	Nitrate
Mean	37.05	32.8	2.68
Std. Dev.	32.13	36.16	2.93
Max.	173.	148	15.0
Min.	10	-6	<0.2
n=	40	40	41

Table 3 summarizes data collected for the period 10/87 to 8/88.

TABLE 3
Water Quality for Period 10/87 to 8/88

	Gross Alpha	Gross Beta	Nitrate
Mean	9.75	18.09	1.67
Std. Dev.	8.35	16.56	0.71
Max.	28	68	3.76
Min.	-2	-17	0.51
n=	36	34	36

SUMMARY OF ENVIRONMENTAL MONITORING DATA
FROM 750 AND 904 PONDCRETE STORAGE AREAS

904 PAD

SOIL

Six soil samples were collected on May 26, 1988, from 4 sites immediately adjacent to the eastern and northern edges of the asphalt pad, and 2 sites chosen as "background" for purposes of evaluating nitrate levels. The 4 samples collected for evaluating contamination were collected from the gravel shoulder to a depth of several inches. These were located where staining on the asphalt indicated that runoff had left the pad. No berm was in place at the time. The sample points are marked by wooden stakes painted red.

Table 1
Soil Sample Analytical Results

Sample	Nitrate ppm	Pu-239 dpm/g	U-234 dpm/g	U-238 dpm/g
1	14	0.540 ± 0.062	2.11 ± 0.22	2.17 ± 0.23
2	850	5.069 ± 0.496	2.49 ± 0.27	2.40 ± 0.26
5	8	0.519 ± 0.049	1.61 ± 0.17	1.49 ± 0.16
6	140	0.578 ± 0.058	2.47 ± 0.26	2.25 ± 0.24

Background nitrate values from sampling points 3 and 4 were 7 ppm and 14 ppm.

It is not possible to collect samples for background plutonium and uranium values in the 904 pad area due to past contamination.

WATER

Sampling of runoff water from the 904 pad began on 2/12/88. Samples were taken where runoff waters exited the pad on the extreme northeast corner, until 6/6/88 when samples were taken from water ponded behind the containment berm also located in the northeast corner of the pad. The berm was constructed to contain storm water runoff, and is not a spill containment structure.

TABLE 2
Summary Table of 904 Pad Water Analysis

DATE	Gross Alpha pCi/l	Gross Beta pCi/L	Nitrate Mg/l
RFP Screening Values	40	50	10
2/12/88	11 ± 15	44 ± 27	0.08
3/3/88	0 ± 38	0 ± 47	2.25
3/3/88	19 ± 22	52 ± 37	3370.
6/6/88			178.
6/6/88	29 ± 36	150 ± 60	120.
6/10/88	-4 ± 17	52 ± 46	26.3
6/15/88	-3 ± 18	59 ± 46	13.1
6/22/88	6 ± 7	57 ± 14	9.64
7/19/88	7 ± 10	70 ± 27	2.97
7/22/88	32 ± 26	47 ± 49	---
7/22/88*	1300 ± 300	2200 ± 300	---
7/22/88**	18000 ± 1000	2800 ± 200	---
8/17/88	4 ± 9	3 ± 23	---

* Filtered water from northeast corner of pad after 7/22/88 spill
** Sediment from northeast corner of pad after 7/22/88 spill in pCi/g

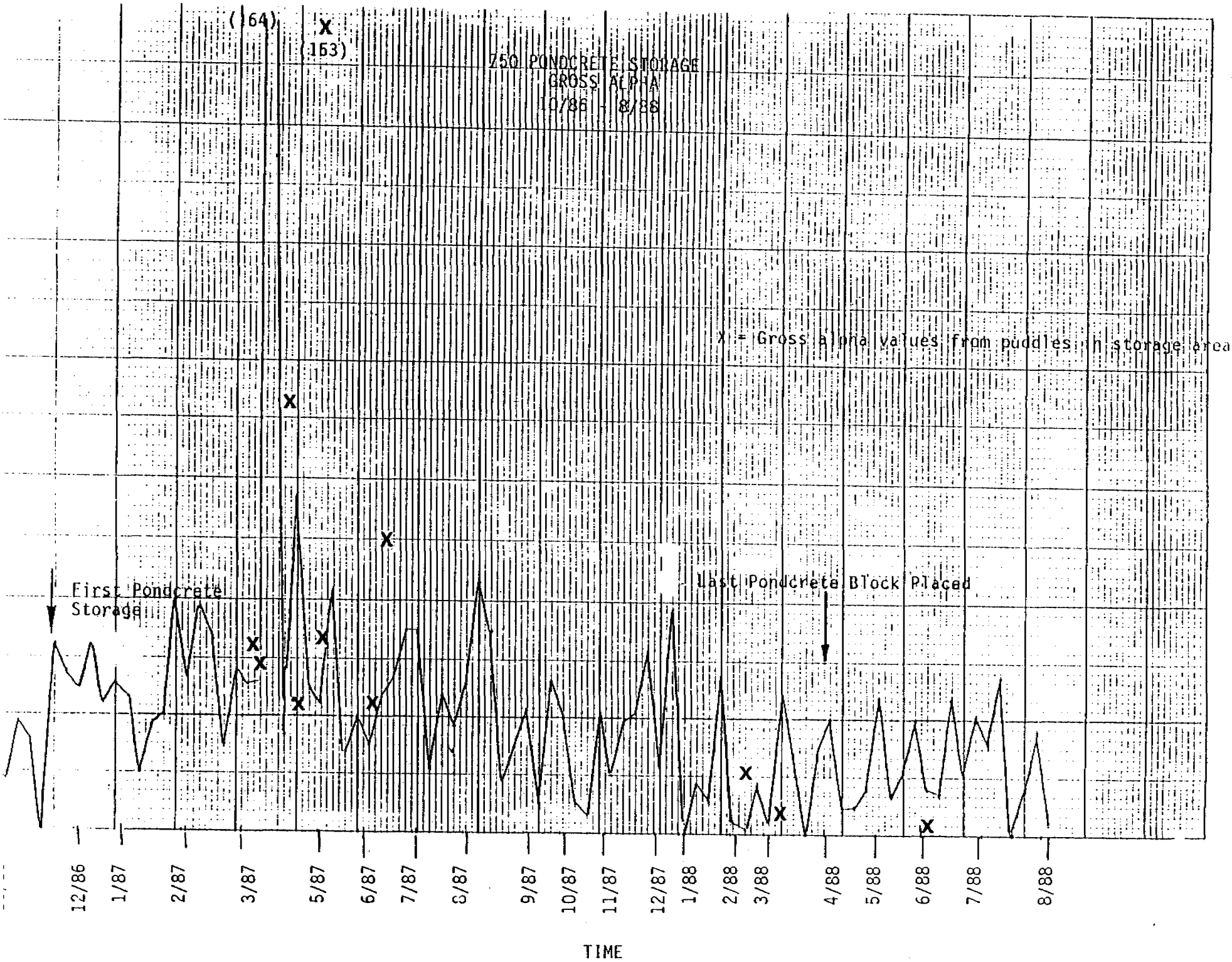
Table 3
Isotope Specific Analysis (pCi/l)

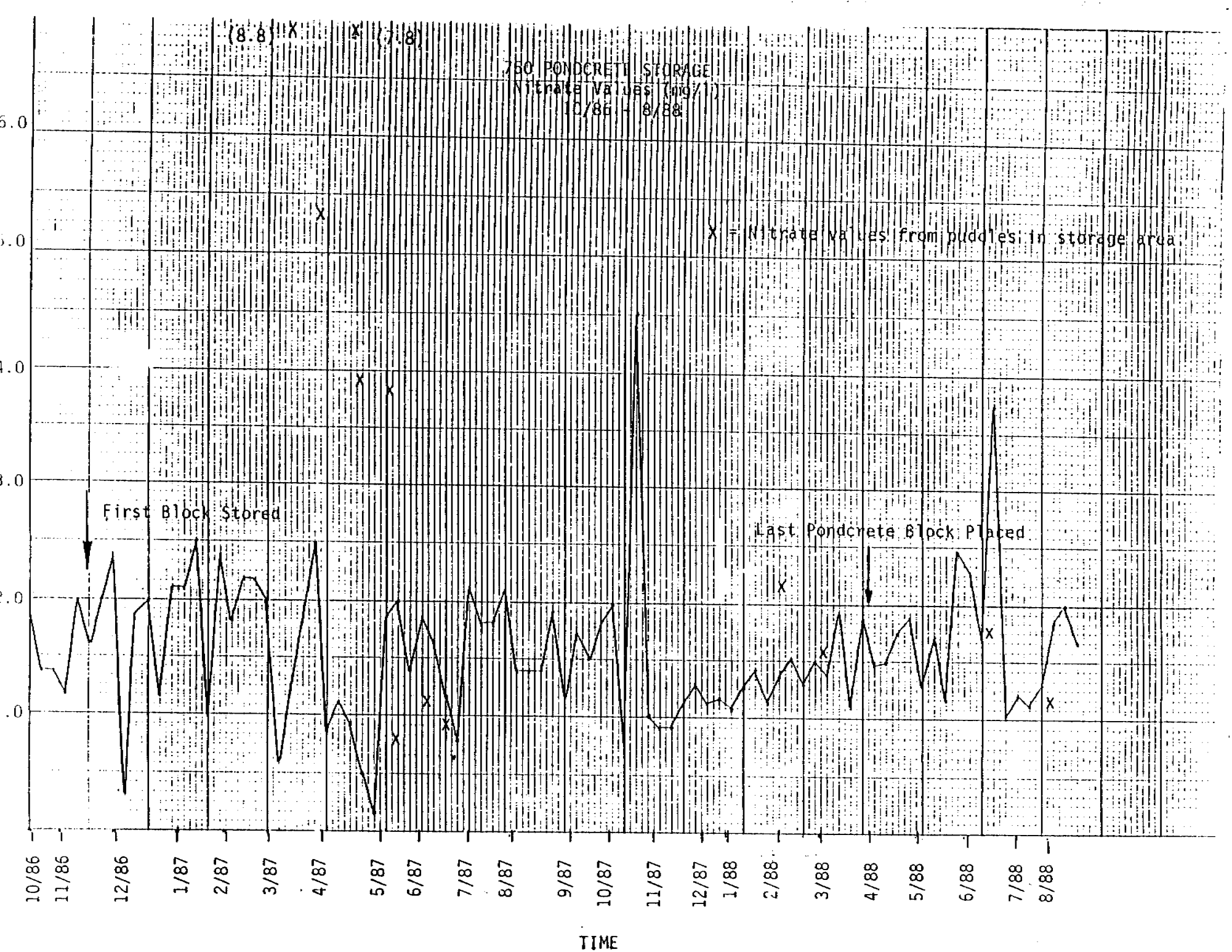
	June 26, 1988	July 22,1988
Pu-238	0.017 ± 0.021	----
Pu-239	0.506 ± 0.088	620 ± 80
Am-241	0.834 ± 0.127	3200 ± 300
U-234	1.414 ± 0.231	140 ± 30
U-235	----	35 ± 17
U-238	1.312 ± 0.186	110 ± 30

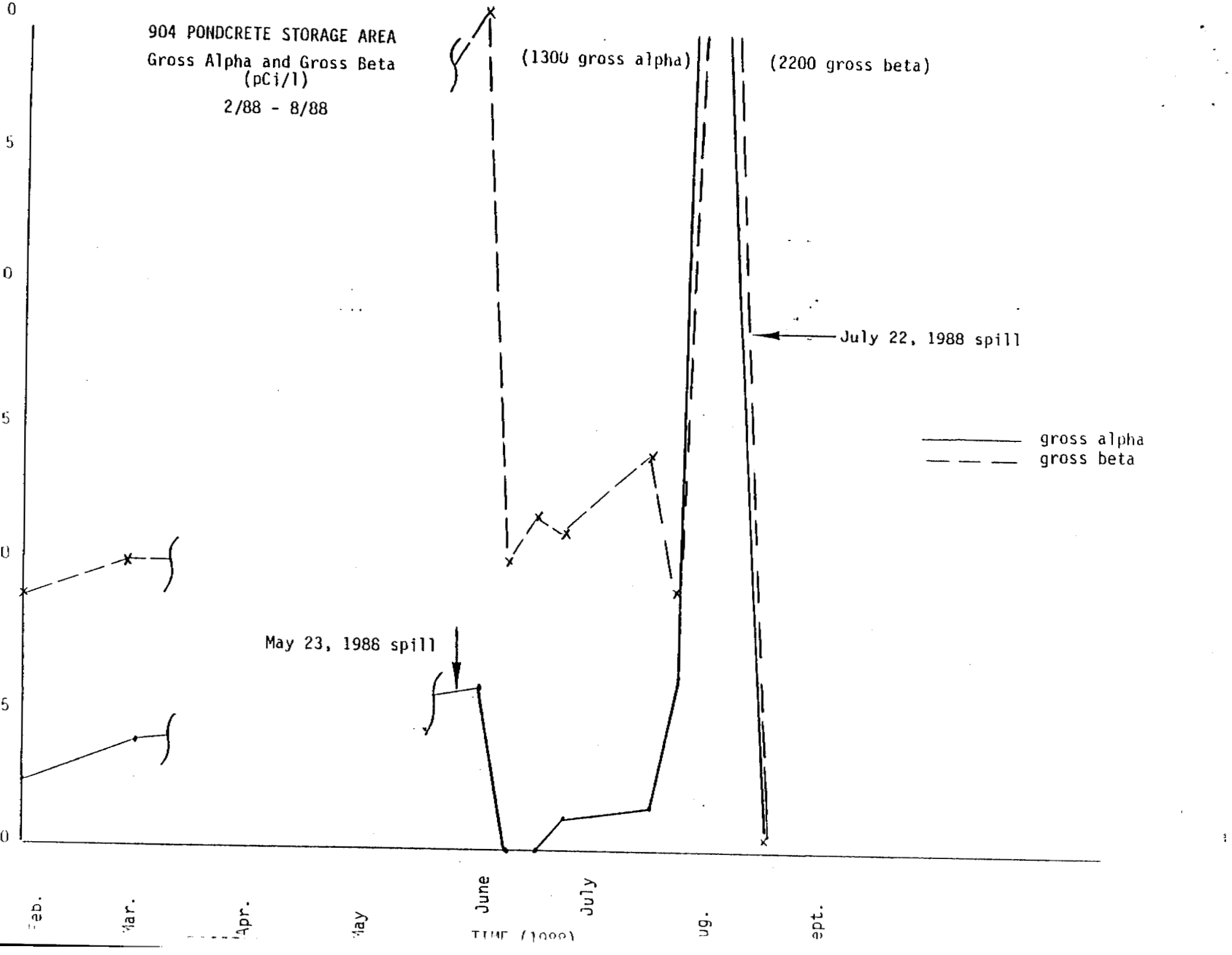
AIR

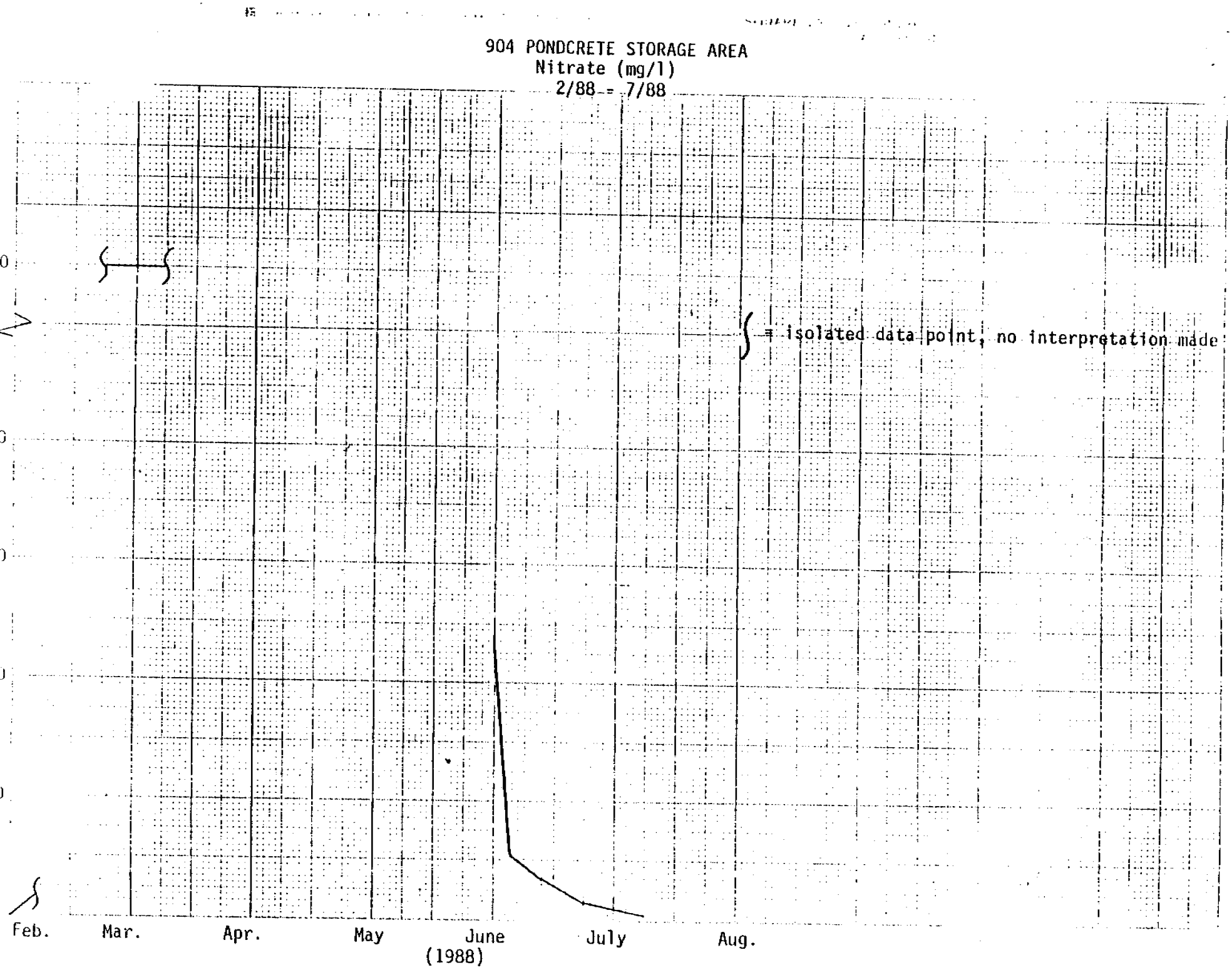
Within a few hours following the May 23, 1988 pondcrete spill incident, portable ambient air samplers were set up on the pad. One was located in the center of the pad, and one was located on the eastern edge of the pad which is downwind from the predominant wind direction.

Data available to this date, 8/22/88, indicate a maximum plutonium concentration of 246 attocuries (.000246 picocuries) per cubic meter of air for the period of 5/23 to 5/26. The maximum total longed lived alpha reading was .008 pCi/m^3 for the period 6/20 to 6/23. The RFP screening level, which is not a regulatory limit, is .01 pCi/m^3 for total long lived alpha. The RFP screening level for plutonium in air is .001 pCi/m^3.


(164)
X
(163)
Z50 PONDCRETE STORAGE
GROSS ALPHA
10/86 - 8/88
X = Gross alpha values from puddles in storage area
First Pondcrete Storage
Last Pondcrete Block Placed
12/86
1/87
2/87
3/87
5/87
6/87
7/87
8/87
9/87
10/87
11/87
12/87
1/88
2/88
3/88
4/88
5/88
6/88
7/88
8/88
TIME


(8.8)
(7.8)
750 PONDCRETE STORAGE
Nitrate Values (mg/l)
10/86 - 8/88
X = Nitrate values from puddles in storage area.
First Block Stored
Last Pondcrete Block Placed
6.0
5.0
4.0
3.0
2.0
1.0
10/86
11/86
12/86
1/87
2/87
3/87
4/87
5/87
6/87
7/87
8/87
9/87
10/87
11/87
12/87
1/88
2/88
3/88
4/88
5/88
6/88
7/88
8/88
TIME


904 PONDCRETE STORAGE AREA
Gross Alpha and Gross Beta
(pCi/l)
2/88 - 8/88
(1300 gross alpha)
(2200 gross beta)
July 22, 1988 spill
May 23, 1986 spill
gross alpha
gross beta
0
5
0
5
0
5
0
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
TIME (1988)


904 PONDCRETE STORAGE AREA
Nitrate (mg/l)
2/88 - 7/88
= isolated data point, no interpretation made
Feb.
Mar.
Apr.
May
June
July
Aug.
(1988)